[0030] What we claim is:

1. Apparatus for measuring the uv fluence in a space comprising a spherical containment vessel having a transmissively passive spherical wall containing an actinometric fluid therewithin that is optically opaque at a known wavelength.

2. An apparatus as defined in claim 1 wherein said actinometric solution comprises a an aqueous solution of 0.6 *M* iodide and 0.1 *M* iodate in 0.01 *M* borate at pH 9.25.

3. An apparatus as defined in claim 1 wherein said actinometric solution is an aqueous mixture of iodide and iodate that is optically opaque at 254 nm but insensitive to radiation above 330 nm.

4. Apparatus as defined in claim 1 wherein said spherical containment vessel is made from quartz.

5. Apparatus as defined in claim 1 wherein said spherical containment vessel has a volume of less than about 1 cubic centimeter.

6. Apparatus as defined in claim 1 wherein said actinometric solution comprises a an aqueous solution having a molar concentration of iodide and iodate of about 3:5 and a ph of about 9.25.

7. An apparatus as defined in claim 1 comprising a colorimeter operatively configured to measure absorbance of light passing through said spherical actinometer for a determination of UV fluence.

8. Apparatus as defined in claim 7 further comprising a plurality of said spherical actionometers dispersed within a volume for determination of uv fluence within the volume.

9. Apparatus as defined in claim 1 wherein said actinometer has neutral buoyancy relative to water for dispersion in a volume of water for measuring fluence throughout the volume.

10. A method of determining UV fluence in a space comprising the steps of preparing a plurality of spherical actimometers containing an actinometric solution therein which is optically opaque at a given wavelength; dispersing said actinometers through out said volume for a known period of time, measuring the change in transmissiveness of the actinometer, and calculating the fluence using the relation fluence (mJ per cm^2 .) = Δ Abs (470 nm) x K x 0.6 ml/cm^2 where K is a constant for the given wavelength.